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EXAMINER	
FLEARY, CAROLYN FATIMAH	
ART UNIT	**PAPER NUMBER**
2152	

DATE MAILED: 03/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/044,827	KUROSAWA ET AL.	
	Examiner	Art Unit	
	Carolyn F. Fleary	2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 January 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. JP 2001-039208, filed on 01/12/2001.

Claim Objections

2. Claim 1 objected to because of the following informalities: In line 10 the word "ore" should be "or". Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 26 recites the limitation "the number of said X blocks that must be retransmitted" in line 5. There is insufficient antecedent basis for this limitation in the claim.

5. Claim 13 recites the limitation "the address of the respective information receiving apparatus" in line 3. There is insufficient antecedent basis for this limitation in the claim. All claims not specifically mentioned above are rejected due to their dependency.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-14, and 16-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art by Applicant (See MPEP 2129) in view of Harrington et al. (US 6,289,012).

In regards to claim 1 Admitted Prior Art by Applicant discloses an apparatus comprising:

- a first information receiving apparatus (fig. 5- CLIENT (1)) having a first group address (fig. 5 – INF1, Pg 7 lines 1-5),
- a second information receiving apparatus (fig. 5- CLIENT (2)) having a second group address (fig. 5 – INF2, Pg 7 Para [0025] lines 1-3), and
- an information transmitting apparatus (fig. 5 – SERVER) in communication with the first and second information receiving apparatus via a network (Pg 1. [000] lines 1-4, Pg 6 [0023] lines 3-4, Pg 7 [0025] lines 1-2),
- the information transmitting apparatus (fig. 5 – SERVER) being arranged and constructed to
    - (1) transmit via the network two or more blocks of data subdivided from a designated information together with the first group address for the first information receiving apparatus in response to receiving a request to transmit the designated information from the first information receiving apparatus (Pg 7 [0024] lines 1-4),
    - (3) transmit via the network one or more blocks of data already transmitted to the first receiving apparatus with the second group address (Pg 7 [0026] lines 1-4), wherein the first (i.e. Client (1)) and second (Client (2)) information receiving apparatus are further arranged and constructed to send the request to transmit the designated information to the information transmitting apparatus (fig 5-REQ1 dotted arrow toward SERVER, fig. 5-REQ2

dotted line toward SERVER)), receive blocks of data via the network (Solid arrow lines from X1 to X4 a the server to Client (2), Solid arrow lines from X1-X4 at the server to Client (1)) , wherein the group address of the received blocks of data are identical to the respective group addresses (Client(1): Pg.7 [0024] lines 2-4, Client (2):Pg 7 [0026] lines 5-6, and store the received blocks of data in a storage device. Admitted Prior Art by Applicant teaches clients which have storage capability and are thus capable of storing clocks of data received from an information receiving apparatus.

Admitted Prior Art by Applicant fails to disclose:

- the information transmitting apparatus (fig. 5 – SERVER) being arranged and constructed to
    - (2) transmit via the network one ore more blocks of data that have not yet been transmitted to the first information receiving apparatus with the first group address and the second group address for the second information receiving apparatus, in response to receiving a request to transmit the designated information from the second information receiving apparatus prior to transmitting all blocks of data, which contain the designated information, to the first information receiving apparatus

Harrington et al. discloses a distributed system that concurrently transmits a series of packets (blocks of data) to a plurality of users in response to download requests from users on a network (col. 3 lines 45-53). The packets consist of download items requested by users, which are then divided up in to segments (blocks of data) and then packetized (col. 6 lines 44-47). Furthermore since the item is prepackaged, packets are be copied in any particular order (col. 7 lines 40-54).

Harrington et al. teaches the systems ability to store an item for downloading to a plurality of users using a single memory buffer for the item. The system then transmits the item as a series of packets on demand to each of the plurality of users, without requiring that the download process for each user commence at the same time, or that the same packet be sent at the same time to each of the users. Thus, a great number of concurrent downloads can be supported without a corresponding increase in the amount of memory that would be expected in the limitations of multicasting (col. 1 lines 45-53). In figure 6-8, Harrington et al. discloses the process of sending data blocks to concurrent users 1-3 (col. 6 lines 56-62). A server download manager (fig 5-507) controls the flow of data blocks for each user in a time-share fashion by initiating and controlling copying of download packets to a network communication buffer (fig 5-515, col. 7 lines 15-19). Depending on the number of users making a request for item, the system often switches between users (i.e. first and second users). In this manner different packets of data can be sent to multiple users concurrently without requiring that multiple copies of the item be made or multiple buffers maintained and concurrent downloading of the same item to multiple users can occur when demanded by the user and not at any prescheduled time as with network multitasking. In this respect, a second user requesting for a download item, some time after a first user has requested the same download item, will receive packets, which are being transmitted to the first use at the same time. In addition, unlike multicasting, one user's problems do not impact download times for other users (col. 7 lines 40-54).

Harrington et al. teaches the user need not acknowledge receipt of each packet and is rather able to wait to the conclusion of a transmission of all the packets to specify which packets did not make it and need to be resent. Without having to a acknowledge receipt of each packet downloading of items occurs faster and imposes less process and memory overheard on the server when downloading concurrently to multiple users (col. 7 lines 55-

58). At the end of a transmission the second user is able to determine the missing data blocks by performing a reliability check process as taught by Harrington et al. (fig 14-#1401-1413, fig. 15). During the process a packet identifier/index is read from the packet header (information fig 7-#709, col. 10 lines 61-62) and is used to detect missing blocks of data and prepare request from a server for missing data (Harrington col. 11 lines 26-44) and thus obtain the remaining blocks of data the were previously sent to a first user.

Admitted Prior Art by Applicant and Harrington et al. are analogous because they are from the similar problem solving area, that is reducing processing time and increasing efficiency for transmitting data in a client/server network and are the similar fields of invention, that is Client/Server communications in a network where data is transmitted and received.

It would be obvious to one of ordinary skill in the art at the time of the invention to modify the Admitted Prior Art by Applicant by transmitting the same blocks of data to a second user who request the same item as a first user and then send the remaining blocks only to a second user, as taught by Harrington et al. in order to eliminate the need for transmitted information to be scheduled and thus allow the transmittal of the same item to multiple users (col. 5 lines 42-44) requesting the information at different times in order to support a computing systems ability, in particular a server's ability, to support greater levels of concurrency when downloading large items, especially when items are being download to users on demand and provide a system that is more scalable in terms of the number of clients that can be supported without significant degradation in performance, and is thus better able to handle unpredictable levels for demand for service (See Harrington et al. col. 3 lines 16-34).

In regards to claim 3 Admitted Prior Art by Applicant discloses an apparatus according to claim 1, wherein the information transmitting apparatus is arranged and constructed to

- cyclically transmit the blocks of data subdivided from the designated information apparatus in a predetermined sequence, when the information transmitting apparatus receives another request to transmit the designated information from another information receiving apparatus prior to transmitting all blocks of data subdivided from the designated information (Pg. 7 [0025] lines 1-3, fig. 5-REQST2 dotted line toward server prior to time t2).

Admitted Prior Art by Applicant in fig 5, shows cyclical transmission of subdivided blocks from information apparatus in a predetermined sequence, with the blocks X1 to X4 transmitted to a Client(1) at a time t1 and then the same blocks X1 to X4 transmitted to a Client (2) an another time t2. "Xn" represents the predetermined sequence in fig. 5, where n = 1 – 4, "n" is the sequence.

In regards to claim 4 , Admitted Prior Art by Applicant discloses an apparatus according to claim 1, wherein

- the information transmitting apparatus further comprises a storage device for storing blocks of data,
    - wherein the information transmitting apparatus is further arranged and constructed to read blocks of data from the storage device (Pg. 5 [0018] lines 1-2) in a predetermined sequence and transmit blocks of data via the network (Pg 3 [0024] lines 1-2).

In regards to claim 5, Admitted Prior Art by Applicant discloses an apparatus according to claim 1, further comprising an

- wherein the information transmitting apparatus is arranged and constructed to transmit via the network each block of data subdivided from the information supplied from the supplying device together with subdivision sequence information indicating the sequence of each block of data (Page 7. lines 1-4).

Admitted Prior Art by applicant is silent on an information supply device as the source of information to the information transmitting apparatus.

Harrington in col. 7 lines 66-67 and col. 8 lines 1-3 discloses the existence of an information supply device in the recitation of a server (i.e. information transmitting apparatus) receiving information that stored and further is divided into blocks and sent to a requesting client (information receiving apparatus).

It would be obvious to one of ordinary skill in the art at the time of the invention that the stored information transmitted by the transmitting apparatus taught by the Admitted Prior Art by Applicant would have originated from an information supplier as taught by Harrington et al. in order to have to provide an information response to receiving apparatus (i.e. clients) that request information (See Harrington et al. col. 3. lines 16-23, 35-37).

In regards to claim 6, Admitted Prior Art by Applicant discloses an apparatus according to claim 5, wherein the information transmitting apparatus is further arranged and constructed to

- 1) store each block of data and a subdivision sequence information of each block of data in a storage device in the predetermined sequence(Pg. 7 [0026] lines 6-8),
- (2) read each block of data and the subdivision sequence information from the storage device in the predetermined sequence (Pg. 7 [0026] lines 6-8) and

- (3) transmit each block of data (fig. 5-X1-X4) and the subdivision sequence ("n" in Xn in fig 5. where n=1to 4) information via the network in response to receiving a transmit request for the designated information (Pg 6 [0023] lines 4-5, Pg 7 [0025] lines 1-4).

Admitted prior art is silent on the information supplied by the information supply apparatus.

Harrington et al. teaches a server apparatus that transmits information to clients via network. The information (fig.6-#701) is prepared and stored (fig. 7- #603) in blocks of data (fig 7-#705, col. 6 lines 44-47, col. 11 lines 55-60) with a storage device (fig. 5- 605) in a predetermined sequence (col. 8 lines 25-27, 35-40). Harrington et al. further teaches the system reads each block of data and the subdivision sequence information from the storage device in the predetermined sequence (col. 9 60-67 col. 10l. 1-5). The blocks of data and subdivision sequence information are transmitted via a network (fig. 13 -#1313) in response to a transmit request(col. 8 lines 49-51) for the designated information (i.e. download item) supplied (col. 7 lines 65-67, col. 7 lines 1-3) by an information source(i.e. information supply apparatus).

It would be obvious to one of ordinary skill in the art at the time of the invention that the stored information transmitted by the transmitting apparatus taught by the Admitted Prior Art by Applicant would have originated from an information supplier as taught by Harrington et al. in order to have to provide an information response to receiving apparatus (i.e. clients) that request information (See Harrington et al. col. 3. lines 16-23, 35-37).

In regards to claim 7, Admitted Prior Art by Applicant discloses an apparatus according to claim 5, wherein the information transmitting apparatus is further arranged and constructed to

- (1) store each block of data and a subdivision sequence information of each block of data in a storage device(Pg. 7 [0026] lines 6-8),
- (2) read each block of data and the subdivision sequence information from the storage apparatus in the sequence specified by the subdivision sequence information(Pg. 7 [0026] lines 6-8) and
- (3) transmit each block of data(fig. 5-X1-X4) and the subdivision sequence information ("n" in Xn in fig 5. where n=1to 4) via the network in response to receiving a request for the designated information supplied from the information supply apparatus(Pg 6 [0023] lines 4-5, Pg 7 [0025] lines 1-4)

Admitted prior art is silent on the information supplied by the information supply apparatus.

Harrington et al. teaches a server apparatus that transmits information to clients via network. The information (fig.6-#701) is prepared and stored (fig. 7- #603) in blocks of data (fig 7-#705, col. 6 lines 44-47, col. 11 lines 55-60) with a storage device (fig. 5- 605) in a predetermined sequence (col. 8 lines 25-27, 35-40). Harrington et al. further teaches the system reads each block of data and the subdivision sequence information from the storage device in the predetermined sequence (col. 9 60-67 col. 10l. 1-5). The blocks of data and subdivision sequence information are transmitted via a network (fig. 13 -#1313) in response to a transmit request (col. 8 lines 49-51) for the designated information (i.e. download item) supplied (col. 7 lines 65-67, col. 7 lines 1-3) by an information source(i.e. information supply apparatus).

It would be obvious to one of ordinary skill in the art at the time of the invention that the stored information transmitted by the transmitting apparatus taught by the Admitted Prior Art by Applicant would have originated from an information supplier as taught by

Harrington et al. in order to have to provide an information response to receiving apparatus (i.e. clients) that request information (See Harrington et al. col. 3. lines 16-23, 35-37).

In regards to claim 8 , Admitted Prior Art by Applicant discloses an apparatus according to claim 1, where an information transmitting apparatus verifies if the information receiving apparatus has received a block of data (Pg 8 lines 3-4)

Admitted Prior Art by Applicant does not disclose:

- wherein the information transmitting apparatus is further arranged and constructed to append error detection/correction information to each block of data and transmit each block of data, and
- the first and second information receiving apparatus are further arranged and constructed to perform error detection and error correction based upon the appended error detection/correction information received together with the block of data.

Harrington et al. discloses:

- append error detection/correction information to each block of data and transmit each block of data. This is performed via reliability information inserted into each block of data that is transmitted. Harrington teaches (fig. 7- #705, col. 6 lines 50-56), a block of data that is composed of the data itself and header which is used for reliability (fig. 7 i.e. error detection/correction information)
- the first and second information receiving apparatus are further arranged and constructed to perform error detection and error correction based upon the appended error detection/correction information received together with the block of data. Harrington et al. teaches (column 9 lines 33-36 &) the error detection/correction process by a client (information receiving apparatus) performed

by way of a reliability check process (fig 14-#1401-1413, fig. 15). During the process a packet identifier/index is read from the header (i.e. error detection/correction information fig 7-#709, col. 10 lines 61-62) and is used to detect missing blocks of data and prepare request a resend request from a server for missing data (Harrington col. 11 lines 26-44).

It would be obvious to one of ordinary skill in the art at the time of the invention to modify Admitted Prior Art by Applicant by having error detection/correction information sent by a server (i.e. information transmitting apparatus) and perform error detection/correction well at a client (i.e. information receiving apparatus), as taught by Harrington et al. in order to reduce the size of a list of missing blocks of data prepared by the client (i.e. information receiving apparatus) and thus speeding the processing at the client(i.e. information receiving apparatus) as well as producing faster transmittal of data by and imposing less processing and memory on a sever(i.e. information transmitting apparatus) when transmitting concurrently to may users (See Harrington et al. col. 7 lines 40-62, col.11 lines 35-40)

In regards to claim 2, Admitted Prior Art by Applicant discloses an apparatus according to claim 1, wherein

- the information transmitting apparatus is arranged and constructed to transmit each block of data with the subdivision sequence information indicating the sequence of each block of data (Pg 3 [0011] lines 5-8) , and

Admitted Prior Art by Applicant does not disclose

- the first and second information receiving apparatus are arranged and constructed to reconstitute the information based upon the received blocks of data and the subdivision sequence information of each block of data.

Harrington et al. discloses:

Clients (i.e. a first and second information receiving apparatus fig. 4-#401, #403), which receive information (col. 6 lines 44-56, i.e. packets/segments) from a server (fig 5. -#501 i.e. information transmitting apparatus). The clients (i.e. information receiving apparatus) receives a response parameters that comprise: number of blocks to be transmitted, index numbers which uniquely identify a block among all transmitted blocks that make up the information as well as its relative position and total size of the transmitted information (i.e. representative of subdivision sequence information col. 8 lines 25-27, 37-42, 55-60). Harrington et al. teaches the client prepares for the information by preparing memory or storage area for the incoming information. Harrington et al. teaches that clients reassemble information based upon the received blocks of data and index information (col. 10 lines 59-65).

It would have been obvious to one of ordinary skill in the art at time of the invention to combine the Admitted Prior with the index numbers identifying a block among transmitted blocks received by an information receiving apparatus (i.e. client) as taught by Harrington et al. in order to permit the information receiving apparatus (i.e. server) to reassemble blocks of data. (See Harrington et al. col. 8 lines 25-27, 37-42, 55-60, col. 10 lines 59-65).

In regards to claim 9, Admitted Prior Art by Applicant discloses an apparatus according to claim 2, wherein the first and second information receiving apparatus are further arranged and constructed to

- determine whether each block of data has been correctly received (Pg 8 lines 3-4)

Admitted Prior Art by Applicant does not disclose:

- that the determination, by the first and second information receiving apparatus, on where each block has been correctly received is based upon the subdivision sequence information within each block of data

Harrington et al. discloses:

- Clients (information receiving apparatus) receives response parameters (representative of subdivision sequence information) that comprise: number of blocks to be transmitted, index numbers (i.e. subdivision sequence information within each block of data) which uniquely identify a block among all transmitted blocks that make up the information as well as its relative position and total size of the transmitted information (col. 8 lines 25-27, 37-42, 55-60). The client during a reliability check process uses index numbers to determine whether each block of data has been correctly received (fig 14-#1401-1413, fig. 15)

It would be obvious to one of ordinary skill in the art at the time of the invention to modify Admitted Prior Art by Applicant by basing the determination on where her each block of data is received upon index information (i.e. subdivision sequence information), as taught by Harrington et al. in order to further speed the processing at the client (i.e. information receiving apparatus) as well as producing faster transmittal of data by and imposing less processing and memory on a sever (i.e. information transmitting apparatus) when transmitting concurrently to may users (See Harrington et al. col. 7 lines 40-62, col.11 lines 35-40)

In regards to claim 10, Admitted Prior Art by Applicant discloses a apparatus according to claim 1,

Admitted Prior Art by Applicant does not further disclose

- wherein the first information receiving apparatus is arranged and constructed to transmit a request to retransmit a block of data to the information transmitting apparatus, and
- the information transmitting apparatus is arranged and constructed to retransmit the requested block of data to the first information receiving apparatus upon receiving the request to retransmit request,
- the first information receiving apparatus being further arranged and constructed to receive and store the retransmitted block of data from the information transmitting apparatus.

Harrington et al. discloses a client sending a request to retransmit data to a server during a reliability process (fig. 15-#1511, col. 11 lines 26-39). The server retransmits blocks of data upon receiving a reliability packet from the client (col. 11 lines 45-52, fig. 16, fig 12). The client is constructed with storage devices (fig 4#411 & 409) to receive and store the retransmitted blocks of data sent by the server (fig 12).

In regards to claim 11, Harrington et al. further discloses an apparatus according to claim 10, wherein the information transmitting apparatus further comprises:

- a first storage device for storing blocks of data that will be transmitted, and a second storage device for storing blocks of data that will be retransmitted (Col 5 lines 4-13, fig 5-#517, fig 6#605, col. 6 lines 38-43, col. 10 lines 59-66),
- wherein the information transmitting apparatus is arranged and constructed to read blocks of data from the first storage device after receiving a transmit request, and to read blocks of data from the second storage device after receiving a retransmit request(Col 5 lines 4-13,).

In regards to claim 12, Harrington et al. further discloses an apparatus according to claim 10,

- wherein the information transmitting apparatus is further arranged and constructed to transmit via the network all blocks of data (fig 4-#405), which contain the designated information (i.e. download item) including the block of data requested to be retransmitted (i.e. retransmission of missing data), in response to receiving a retransmit request (i.e. reliability packet, fig 16-#1601) for at least one block of data(fig. 15-#1511, col. 11 lines 26-39).

In regards to claims 10-12 above, one of ordinary skill in the art at the time of invention would have clearly recognized that it is quite advantageous to modify Admitted Prior Art by Applicant by having providing the apparatus with the ability to transmit request for data, receive, store and read requested blocks of data, as taught by Harrington et al. in order to make the system more reliable by allowing an interrupted transmission of blocks of data to be resumed. (col. 3 lies 45-58, col. 11 lines 26-39, col. 11 lines 45-52, fig. 16, fig 12)

In regards to claim 13, Admitted Prior Art by Applicant discloses a apparatus according to claim 10,

- b) or to specify the group address previously set for the respective information receiving apparatus that sent the retransmit request as the address of the block of data requested to be retransmitted, based on an evaluated result of bandwidth utilization status of the network.

Applicant has used the term "or" within Claim 13. Examiner interprets "or" as an indication of an alternative between a) and b) in Claim 13. Meaning, that at least one, either a) or b) can be selected for Claim 13 to be true. However Admitted Prior Art by

Applicant discloses the transmission of blocks based on evaluated result of bandwidth utilization status of the network (Page 7-8 [0027] Page 5 [0017] [0018])

Harrington et al. discloses:

- a) wherein the information transmitting apparatus is arranged and constructed, in response to receiving a retransmit request from the first or second information receiving apparatus, to determine whether to specify the address of the respective information receiving apparatus that sent the retransmit request,

Harrington et al. shows in figure 16 that it does not matter which client sends a retransmit request to a server because the sever will acknowledge a retransmit request (fig 16-1601) and resume preparation (fig 17-1607) for resubmission of the missing data. An address of the client is identified in an address variable "UserAddress" as shown in fig 17 for each and every client that transmits and request of data to the server. Figure 15-1511 shows the request to server to retransmit blocks of data. Fig 16-#1601-1607 shows the server receiving the request. Figure 12 and 13 shows the process for processing a request for data and retransmit request for data. An original request for data or a retransmitted request for data undergoes the same process for receiving data from the server. Harrington teaches that a distributed system is capable of transmitting request information to a plurality of users concurrently.

In regards to claim 13, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the Admitted Prior Art by Applicant by retransmitting requested blocks of data as taught by Harrington et al. for/in order to eliminate the need for transmitted information to be schedule and thus allow the transmittal of the same item to multiple users (col. 5 lines 42-44) requesting the information at different times in order to support a computing systems ability, in particular a server's ability, to support greater levels of concurrency when downloading large items, especially when items are being

download to users on demand and provide a system that is more scalable in terms of the number of clients that can be supported without significant degradation in performance, and is thus better able to handle unpredictable levels for demand for service (See Harrington et al. col. 3 lines 16-34).

In regards to claim 14, Admitted Prior Art by Applicant further discloses an apparatus according to claim 13,

- wherein the information transmitting apparatus is further arranged and constructed to evaluate the bandwidth utilization status of the network based upon a comparison of a limit value (i.e. maximum N, Page 7 [0027] and the number of blocks of data requested to be (Page 7-8 [0027] Page 5 [0017])transmitted.

Admitted Prior Art by Applicant does not teach the retransmission of blocks of data requested.

Harrington et al. discloses a client sending a request to retransmit data to a server during a reliability process (fig. 15-#1511, col. 11 lines 26-39). The server retransmits blocks of data upon receiving a reliability packet from the client (col. 11 lines 45-52, fig. 16, fig 12). The client is constructed with storage devices (fig 4#411 & 409) to receive and store the retransmitted blocks of data sent by the server (fig 12).

One of ordinary skill in the art at the time of invention would have clearly recognized that it is quite advantageous to modify Admitted Prior Art by Applicant by having providing the apparatus with the ability to transmit a retransmit request for data, receive, store and read requested blocks of data, as taught by Harrington et al. in order to make the system more reliable by allowing an interrupted transmission of blocks of data to be resumed (col. 3 lies 45-58, col. 11 lines 26-39, col. 11 lines 45-52, fig. 16, fig 12).

In regards to claim 16, Admitted Prior art and Harrington discloses an apparatus according to claim 1,

- Admitted Prior Art by Applicant discloses wherein the information transmitting apparatus is further arranged and constructed to regulate the number of blocks of data transmitted via the network such that the quantity of data on the network per unit time does not exceed a predetermined quantity (Page 5 [0017][0018] Page 7 [0027].

Harrington et al. discloses flow control of data on the network. Harrington et al. teaches during the sending process for any one of the users (receiving apparatus), one or more of the packets (fig. 7 705, "blocks of data") in the packaged download item (request from receiving apparatus, fig. 7-603) are copied one at a time to network communications buffer (fig 6-605). A download manager (fig. 5- 507) controls the flow of data packets (i.e. blocks of data) for each user in a time-share fashion by initiating and controlling copying of the download packets to the network communications buffer. The download manager could be set up to send a preset number (i.e. predetermined quantity) of packets for a user before switching to a next user. This number could be based on an initial determination of the type of network connection the user has, or on some number that optimizes performance of the server (i.e. transmitting apparatus), or both. In some circumstances, flow control may not be needed, or default packet transmission rate settings can be employed.

In regards to claim 17, Admitted Prior Art by Applicant discloses, an apparatus according to claim 1,

- wherein the information transmitting apparatus (fig. 5-SERVER) is arranged and constructed, in response to receiving a transmit request from the first or second

information receiving apparatus (fig. 5-REQ1 & REQ2), to transmit the group address for the first (fig. 5 INF1) or second information receiving apparatus (fig 5-INF2) to the first or second information receiving apparatus, and the first and second information receiving apparatus are arranged and constructed to store the group address transmitted from the information transmitting apparatus as its own group address (Page 7 lines 1-4, Page 7 [0025]lines 4-5).

In regards to claim 18, Admitted Prior Art by Applicant disclose an apparatus according to claim 1,

- wherein the information transmitting apparatus is further arranged and constructed, in response to receiving a transmit request from the first or second information receiving apparatus, to set the network, wherein blocks of data transmitted from the information Transmitting apparatus will arrive at the first or second information receiving apparatus.

Admitted Prior Art by Applicant shows in figure 5 where in response to receiving a transmit request (Fig 5-REQ1, REQ2) from the first or second information receiving apparatus (Fig 5-Client(1) or Client(2)), the information transmitting apparatus (fig 5-SERVER)) sets the network wherein in blocks of data transmitted arrive at the first or second information receiving apparatus (Solid arrows from Blocks X1-X4 and Clients (1) & (2)).

In regards to claim 19, Admitted Prior Art by Applicant discloses a method for communicating information comprising:

- transmitting a request for designated information from a first information receiving apparatus to an information transmitting apparatus (fig 5-REQ1 dotted arrow towards SERVER, Pg. 6 [0023] lines 3-6),
- transmitting the requested designated information from the information transmitting apparatus to the first information receiving apparatus in response to receiving the request to transmit the designated information(fig 5-[X1 to X4] Solid arrows towards CLIENT (1), Pg 7. [0024]),
    - wherein the designated information is subdivided into blocks of data and the blocks of data are sequentially sent to the first information receiving apparatus (fig. 4-[X1 to X4] Solid arrows toward Client(1)), and
    - wherein each block of data further includes a first group address corresponding to the first information receiving apparatus(fig 5-INF1, Pg 7 lines 1- 4),
- transmitting another request for the designated information from a second information receiving apparatus to the information transmitting apparatus (fig 5-REQ2 dotted line toward SERVER, Pg 7 [0025] lines 1-3),
- transmitting blocks of data with only the second group address (fig. 5-INF2, fig 5-[X1-X4] solid arrows toward CLIENT(2)) that were previously transmitted to the first information receiving apparatus (represented in Figure 5 by X1-X4 blocks sent to both CLIENT(1) and CLIENT (2). Sent to Client (1) at time t1 sent to Client (2) at time t2),

Admitted Prior Art by Applicant by applicant fails to disclose:

- transmitting blocks of data not yet transmitted to the first information receiving apparatus together with the first group address and a second group address

corresponding to the second information receiving apparatus in response to receiving the transmit request from the second information receiving apparatus,

- wherein a middle block of data is first sent to the second information receiving apparatus prior to all blocks of data having been sent to the first information receiving apparatus, and

- wherein less than all blocks of data are transmitted with only the second group address

Harrington et al. discloses a distributed system that concurrently transmits a series of packets (blocks of data) to a plurality of users in response to download requests from users on a network (col. 3 lines 45-53). The packets consist of download items requested by users, which are then divided up in to segments (blocks of data) and then packetized (col. 6 lines 44-47). Any divided segment is equivalent to a middle block of data.

Harrington et al. teaches the systems ability to store an item for downloading to a plurality of users using a single memory buffer for the item. The system then transmits the item as a series of packets on demand to each of the plurality of users, without requiring that the download process for each user commence at the same time, or that the same packet be sent at the same time to each of the users. Thus, a great number of concurrent downloads can be supported without a corresponding increase in the amount of memory that would be expected the limitations of multicasting (col. 1 lines 45-53). In figure 6-8, Harrington et al. discloses the process of sending data blocks to concurrent users 1-3 (col. 6 lines 56-62). A server download manager (fig 5-507) controls the flow of data blocks for each user in a time-share fashion by initiating and controlling copying of download packets to a network communication buffer (fig 5-515, col. 7 lines 15-19). Depending on the number of users making a request for item, the system often switches between users (i.e. first and second users). In this manner different packets of data can be sent to multiple

users concurrently without requiring that multiple copies of the item be made or multiple buffers maintained and concurrent downloading of the same item to multiple users can occur when demanded by the user and not at any prescheduled time as with network multitasking. In this respect, a second user requesting for a download item, some time after a first user has requested the same download item, will receive packets, which are being transmitted to the first use at the same time. In addition, unlike multicasting, one user's problems do not impact download times for other users (col. 7 lines 40-54). Furthermore since the item is prepackaged, packets need not be copied in any particular order (col. 7 lines 40-54).

Harrington et al. teaches the user need not acknowledge receipt of each packet and is rather able to wait to the conclusion of a transmission of all the packets to specify which packets did not make it and need to be sent. Without having to a acknowledge receipt of each packet downloading occurs faster and imposes less process and memory overheard on the server when downloading concurrently to multiple users (col. 7 lines 55-58). At the end of a transmission the second user will be able to determine the missing data blocks by performing a reliability check process as taught by Harrington et al. (fig 14-#1401-1413, fig. 15). During the process a packet identifier/index is read from the packet header (information fig 7-#709, col. 10 lines 61-62) and is used to detect missing blocks of data and prepare request from a server for missing data (Harrington col. 11 lines 26-44) and thus obtain the remaining blocks of data the were previously sent to a first user.

Admitted Prior Art by Applicant and Harrington et al. are analogous because they are from the similar problem solving area, that is reducing processing time and increasing efficiency for transmitting data in a client/server network and the similar fields of invention, that is Client/Server communications in a network where data is transmitted and received.

It would be obvious to one of ordinary skill in the art at the time of the invention to modify the Admitted Prior Art by Applicant by transmitting the same blocks of data (beginning with a middle block) to a second user who request the same item as a first user and then send the remaining blocks only to a second user, as taught by Harrington et al. for/in order to eliminate the need for transmitted information to be schedule and thus allow the transmittal of the same item to multiple users (col. 5 lines 42-44) requesting the information at different times in order to support a computing systems ability, in particular a server's ability, to support greater levels of concurrency when downloading large items, especially when items are being download to users on demand and provide a system that is more scalable in terms of the number of clients that can be supported without significant degradation in performance, and is thus better able to handle unpredictable levels for demand for service (See Harrington et al. col. 3 lines 16-34).

In regards to claim 20, Admitted Prior Art by Applicant discloses a method according to claim 19, further comprising

- transmitting each block of data with subdivision sequence information(Pg 3 [0011] lines 5-8),

Admitted Prior Art by Applicant does not disclose:

- which subdivision sequence information enables the first and second information receiving apparatus to reconstitute the blocks of data into the designated information.

Harrington et al. discloses:

Clients (i.e. a first and second information receiving apparatus fig. 4-#401, #403), which receive information (col. 6 lines 44-56, i.e. packets/segments) from an server (fig 5. – #501 i.e. information transmitting apparatus). The clients (i.e. information receiving

apparatus) receives a response parameters that comprise: number of blocks to be transmitted, index numbers which uniquely identify a block among all transmitted blocks that make up the information as well as its relative position and total size of the transmitted information (i.e. representative of subdivision sequence information col. 8 lines 25-27, 37-42, 55-60). Harrington et al. teaches the client prepares for the information by preparing memory or storage area for the incoming information. Harrington et al. teaches that clients reassemble information based upon the received blocks of data and index information (col. 10 lines 59-65).

It would have been obvious to one of ordinary skill in the art at time of the invention to combine the Admitted Prior with the index numbers identifying a block among transmitted blocks received by an information receiving apparatus (i.e. client) as taught by Harrington et al. in order to permit the information receiving apparatus (i.e. server) to reassemble blocks of data. (See Harrington et al. col. 8 lines 25-27, 37-42, 55-60, col. 10 lines 59-65).

In regards to claim 21, Admitted Prior Art by Applicant discloses a method according to claim 19, further comprising

- cyclically transmitting each block of data subdivided from the requested information in a predetermined sequence as long as requests to transmit are received from information receiving apparatus prior to transmitting all blocks of data that comprise the requested information. (Pg. 7 [0025] lines 1-3, fig. 5-REQST2 dotted line toward server prior to time t2).

Admitted Prior Art by Applicant in fig 5, shows cyclical transmission of subdivided blocks from information apparatus in a predetermined sequence, with the blocks X1 to X4 transmitted to a Client(1) at a time t1 and then the same blocks X1 to X4 transmitted to a

Client (2) an another time t2. "Xn" represents predetermined sequence in fig. 5, where n = 1 – 4, "n" is the sequence.

In regards to claim 22, Admitted prior Art by Applicant discloses an apparatus for communicating information comprising:

- means (Client (1) via network) for transmitting a request for designated information from a first information receiving apparatus to an information transmitting apparatus fig 5-REQ1 dotted arrow towards SERVER, Pg. 6 [0023] lines 3-6),
- means (Server via network) for transmitting the requested designated information from the information transmitting apparatus to the first information receiving apparatus in response to receiving the request to transmit the designated information(fig 5-[X1 to X4] Solid arrows towards CLIENT (1), Pg 7. [0024]),
    - wherein the designated information is subdivided into blocks of data and the blocks of data are sequentially sent to the first information receiving apparatus(fig. 4-[X1 to X4] Solid arrows toward Client(1)), and
    - wherein each block of data further includes a first group address corresponding to the first information receiving apparatus(fig 5-INF1, Pg 7 lines 1- 4),
- means (Client (2) via network) for transmitting another request for the designated information from a second information receiving apparatus to the information transmitting apparatus(fig 5-REQ2 dotted line toward SERVER, Pg 7 [0025] lines 1-3),

- means (Server) for transmitting blocks of data with only the second group address that were previously transmitted(fig. 5-INF2, fig 5-[X1-X4] solid arrows toward CLIENT(2)) to the first information receiving apparatus, wherein less than all blocks of data are transmitted with only the second group address (represented in Figure 5 by X1-X4 blocks sent to both CLIENT(1) and CLIENT (2). Sent to Client (1) at time t1 sent to Client (2) at time t2).

Admitted Prior Art by Applicant by applicant fails to disclose:

- means for transmitting blocks of data not yet transmitted to the first information receiving apparatus together with the first group address and a second group address corresponding to the second information receiving apparatus in response to receiving the transmit request from the second information receiving apparatus,
    - wherein a middle block of data is first sent to the second information receiving apparatus prior to all blocks of data having been sent to the first information receiving apparatus, and

Harrington et al. discloses a Sever (fig 5-501) as a means to transmit data not yet sent to a first client machine and a second client machine in response to receiving a request for information from the second receiving apparatus. Harrington et al. discloses a distributed system that concurrently transmits a series of packets (blocks of data) to a plurality of users in response to download requests from users on a network (col. 3 lines 45-53). The packets consist of download items requested by users, which are then divided up in to segments (blocks of data) and then packetized (col. 6 lines 44-47). Any divided segment is equivalent to a middle block of data.

Harrington et al. teaches the systems ability to store an item for downloading to a plurality of users using a single memory buffer for the item. The system then transmits the

item as a series of packets on demand to each of the plurality of users, without requiring that the download process for each user commence at the same time, or that the same packet be sent at the same time to each of the users. Thus, a great number of concurrent downloads can be supported without a corresponding increase in the amount of memory that would be expected the limitations of multicasting (col. 1 lines 45-53). In figure 6-8, Harrington et al. discloses the process of sending data blocks to concurrent users 1-3 (col. 6 lines 56-62). A server download manager (fig 5-507) controls the flow of data blocks for each user in a time-share fashion by initiating and controlling copying of download packets to a network communication buffer (fig 5-515, col. 7 lines 15-19). Depending on the number of users making a request for item, the system often switches between users (i.e. first and second users). In this manner different packets of data can be sent to multiple users concurrently without requiring that multiple copies of the item be made or multiple buffers maintained and concurrent downloading of the same item to multiple users can occur when demanded by the user and not at any prescheduled time as with network multitasking. In this respect, a second user requesting for a download item, some time after a first user has requested the same download item, will receive packets, which are being transmitted to the first use at the same time. In addition, unlike multicasting, one user's problems do not impact download times for other users (col. 7 lines 40-54). Furthermore since the item is prepackaged, packets need not be copied in any particular order (col. 7 lines 40-54).

Harrington et al. teaches the user need not acknowledge receipt of each packet and is rather able to wait to the conclusion of a transmission of all the packets to specify which packets did not make it and need to be sent. Without having to a acknowledge receipt of each packet downloading occurs faster and imposes less process and memory overheard on the server when downloading concurrently to multiple users (col. 7 lines 55-58). At the end

of a transmission the second user will be able to determine the missing data blocks by performing a reliability check process as taught by Harrington et al. (fig 14-#1401-1413, fig. 15). During the process a packet identifier/index is read from the packet header (information fig 7-#709, col. 10 lines 61-62) and is used to detect missing blocks of data and prepare request from a server for missing data (Harrington col. 11 lines 26-44) and thus obtain the remaining blocks of data the were previously sent to a first user.

Admitted Prior Art by Applicant and Harrington et al. are analogous because they are from the similar problem solving area, that is reducing processing time and increasing efficiency for transmitting data in a client/server network and the similar fields of invention, that is Client/Server communications in a network where data is transmitted and received. It would be obvious to one of ordinary skill in the art at the time of the invention to modify the Admitted Prior Art by Applicant by transmitting the same blocks of data (beginning with a middle block) to a second user who request the same item as a first user and then send the remaining blocks only to a second user, as taught by Harrington et al. for/in order to eliminate the need for transmitted information to be schedule and thus allow the transmittal of the same item to multiple users (col. 5 lines 42-44) requesting the information at different times in order to support a computing systems ability, in particular a server's ability, to support greater levels of concurrency when downloading large items, especially when items are being download to users on demand and provide a system that is more scalable in terms of the number of clients that can be supported without significant degradation in performance, and is thus better able to handle unpredictable levels for demand for service (See Harrington et al. col. 3 lines 16-34).

In regards to claim 23, Admitted Prior Art by Applicant discloses a method for communicating information over a network comprising:

- dividing data for distribution over said network into sequentially ordered X blocks (fig. 5 –X1 to X4, Pg. 1 [0003] lines 9-13, Pg. 6 [0023] lines 3-6);

- receiving a first dispatch request seeking said data from a first client (fig 5-REQ1 dotted arrow towards SERVER, Pg. 6 [0023] lines 3-6);

- transmitting a first group address via said network to said first client (fig. 5 – INF1,Pg 7. lines 1-5);

- sequentially transmitting each of said X blocks, commencing with a first block of said X blocks, to said first client (Pg 7. [0024]);

- receiving a second dispatch request selecting said data from a second client (Pg. 7 [0025] lines 1-3, fig-5: Solid arrow lines from X1-X4 at the server to Client (1));

- transmitting a second group address (fig. 5-INF2, fig 5-[X1-X4] solid arrows toward CLIENT(2)) via said network to said second client (Pg. 7 [0025] lines 3-4);
- starting with said first block, sequentially transmitting all of said X blocks which have not yet been sent to said second client(represented in Figure 5 by X1-X4 blocks sent to both CLIENT(1) and CLIENT (2). Sent to Client (1) at time t1 sent to Client (2) at time t2).

Admitted Prior Art by Applicant does not disclose:

- sequentially transmitting all remaining blocks of said X blocks that have not yet been sent to said first client to said first client and said second client

Harrington et al. discloses a Sever (fig 5-501) as a means to transmit data not yet sent to a first client machine and a second client machine in response to receiving a request for information from the second receiving apparatus. Harrington et al. discloses a

distributed system that concurrently transmits a series of packets (blocks of data) to a plurality of users in response to download requests from users on a network (col. 3 lines 45-53). The packets consist of download items requested by users, which are then divided up in to segments (blocks of data) and then packetized (col. 6 lines 44-47). Any divided segment is equivalent to a middle block of data.

Harrington et al. teaches the systems ability to store an item for downloading to a plurality of users using a single memory buffer for the item. The system then transmits the item as a series of packets on demand to each of the plurality of users, without requiring that the download process for each user commence at the same time, or that the same packet be sent at the same time to each of the users. Thus, a great number of concurrent downloads can be supported without a corresponding increase in the amount of memory that would be expected the limitations of multicasting (col. 1 lines 45-53). In figure 6-8, Harrington et al. discloses the process of sending data blocks to concurrent users 1-3 (col. 6 lines 56-62). A server download manager (fig 5-507) controls the flow of data blocks for each user in a time-share fashion by initiating and controlling copying of download packets to a network communication buffer (fig 5-515, col. 7 lines 15-19). Depending on the number of users making a request for item, the system often switches between users (i.e. first and second users). In this manner different packets of data can be sent to multiple users concurrently without requiring that multiple copies of the item be made or multiple buffers maintained and concurrent downloading of the same item to multiple users can occur when demanded by the user and not at any prescheduled time as with network multitasking. In this respect, a second user requesting for a download item, some time after a first user has requested the same download item, will receive packets, which are being transmitted to the first use at the same time. In addition, unlike multicasting, one user's problems do not impact download times for other users (col. 7 lines 40-54).

Furthermore since the item is prepackaged, packets need not be copied in any particular order (col. 7 lines 40-54).

Harrington et al. teaches the user need not acknowledge receipt of each packet and is rather able to wait to the conclusion of a transmission of all the packets to specify which packets did not make it and need to be sent. Without having to a acknowledge receipt of each packet downloading occurs faster and imposes less process and memory overheard on the server when downloading concurrently to multiple users (col. 7 lines 55-58). At the end of a transmission the second user will be able to determine the missing data blocks by performing a reliability check process as taught by Harrington et al. (fig 14-#1401-1413, fig. 15). During the process a packet identifier/index is read from the packet header (information fig 7-#709, col. 10 lines 61-62) and is used to detect missing blocks of data and prepare request from a server for missing data (Harrington col. 11 lines 26-44) and thus obtain the remaining blocks of data the were previously sent to a first user.

Admitted Prior Art by Applicant and Harrington et al. are analogous because they are from the similar problem solving area, that is reducing processing time and increasing efficiency for transmitting data in a client/server network and the similar fields of invention, that is Client/Server communications in a network where data is transmitted and received.

It would be obvious to one of ordinary skill in the art at the time of the invention to modify the Admitted Prior Art by Applicant by transmitting the same blocks of data (beginning with a middle block) to a second user who request the same item as a first user and then send the remaining blocks only to a second user, as taught by Harrington et al. for/in order to eliminate the need for transmitted information to be schedule and thus allow the transmittal of the same item to multiple users (col. 5 lines 42-44) requesting the information at different times in order to support a computing systems ability, in particular a server's ability, to support greater levels of concurrency when downloading large items,

especially when items are being download to users on demand and provide a system that is more scalable in terms of the number of clients that can be supported without significant degradation in performance, and is thus better able to handle unpredictable levels for demand for service (See Harrington et al. col. 3 lines 16-34).

In regards to claim 24, Admitted Prior Art by Applicant discloses the method of claim 23 wherein said sequentially transmitting each of said X blocks step and said sequentially transmitting all remaining blocks of said X blocks steps further comprises appending sequence information into each of said X blocks.

Admitted Prior Art by applicants shows appending of sequence information into each of said X blocks in figure 5. Where each block is represent by "X" and the sequence information represented by n=1-4.

In regards to claim 25, Admitted Prior Art by Applicant discloses the method of claim 23 wherein said

- sequentially transmitting each of said X blocks

Admitted Prior Art by Applicant fails to disclose:

- wherein said sequentially transmitting each of said X blocks step and said sequentially transmitting all remaining blocks of said X blocks steps further comprise appending error correction information into each of said X blocks.

Harrington et al. discloses:

- append error detection/correction information to each block of data and transmit each block of data. This is performed via reliability information inserted into each block of data that is transmitted. Harrington teaches (fig. 7- #705, col. 6 lines 50-

56), a block of data that is composed of the data itself and header which is used for reliability (fig. 7 i.e. error detection/correction information)

- the first and second information receiving apparatus are further arranged and constructed to perform error detection and error correction based upon the appended error detection/correction information received together with the block of data. Harrington et al. teaches (column 9 lines 33-36 &) the error detection/correction process by a client (information receiving apparatus) performed by way of a reliability check process (fig 14-#1401-1413, fig. 15). During the process a packet identifier/index is read from the header (i.e. error detection/correction information fig 7-#709, col. 10 lines 61-62) and is used to detect missing blocks of data and prepare request a resend request from a server for missing data (Harrington col. 11 lines 26-44).

It would be obvious to one of ordinary skill in the art at the time of the invention to modify Admitted Prior Art by Applicant by having error detection/correction information sent by a server (i.e. information transmitting apparatus) and perform error detection/correction well at a client (i.e. information receiving apparatus), as taught by Harrington et al. in order to reduce the size of a list of missing blocks of data prepared by the client (i.e. information receiving apparatus) and thus speeding the processing at the client(i.e. information receiving apparatus) as well as producing faster transmittal of data by and imposing less processing and memory on a sever(i.e. information transmitting apparatus) when transmitting concurrently to may users (See Harrington et al. col. 7 lines 40-62, col.11 lines 35-40)

8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art in view of Harrington et al. (US 6,289,012) as applied to claim 25 above, and further in view of Miller (US 5,553,083)

In regards to claim 15, Claim 13 as modified above fails to disclose an apparatus:

- wherein the information transmitting apparatus is further arranged and constructed to inform the first information receiving apparatus, which has sent a request to retransmit, of the evaluated result, and
- the first information receiving apparatus is further arranged and constructed to select a transmission method for receiving the block of data, which was requested to be retransmitted, based upon the evaluated result provided by the information transmitting apparatus.

Miller teaches a method of transmitting data to a plurality of recipients (fig. 2-22) via a network (col. 3 lines 66-67, col. 4 lines 1-3). The system is capable of selecting between unicast and multicast as transmission methods for transferring data to recipients. Miller shows, in figure 1, a data flow used for the request to retransmit data by a recipient. The transmitting apparatus (fig. 2-20) sends data at a rate of transfer that is configurable. The rate of transfer may be decreased based on performance (i.e. the evaluation result.

It would be obvious to one of ordinary skill in the art at the time of the invention to modify claim 13 by having the selection of a transmission method determined the an evaluated result, as taught by Miller in order to provide both fast and reliable transmission of files from a server to one or more clients over a communication link (See Miller col. 2 lines 29-31, 65-67, col. 3 lines 4-34, col. 11 lines 45-52)

9. Claim 26-28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art in view of Harrington et al. (US 6,289,012) as applied to claim 25 above, and further in view of Marturano et al. (US 5,636,230)

In regards to claim 26,27 and 28 Admitted Prior Art by Applicant disclose the method of claim 25 further comprising:

- receiving a transmit request from at least one of said first client and said second client,

Admitted Prior Art by Applicant fails to disclose:

- receiving a retransmit request from at least one of said first client and said second client, said retransmit request containing information regarding which of said X blocks that must be retransmitted; and
- determining whether the number of said X blocks that must be retransmitted exceeds a predetermined value.

Harrington et al. discloses:

- receiving a retransmit request from at least one of said first client and said second client, said retransmit request containing information regarding which of said X blocks that must be retransmitted (col. 11 lines 7-14, 31-39);
- transmitting said X blocks that must be retransmitted via said network(fig# 12-16).
- establishing a communication connection in said network with whichever of said first client and/or said second client that sent said retransmit request(col. 11 lines 7-52)

Harrington et al. does not disclose

- a predetermined value; where determining whether the number of said X blocks that must be retransmitted exceeds a predetermined value, equal to or greater than said predetermined value, and is less than said predetermined value.

Marturano et al. teaches a method for communication information in a communication system. A resent counter tracks the number of times a request is sent for re-transmission of a particular data block or group of data blocks (col. 3 lines 53-56) the resend counter is compared to a counter limit value representing the maximum allowable number of resent requests for any portion of received data blocks (col. 4 lines 14-26). If the resend counter has not exceed the counter limit value a resend requested is transmitted (col. 4 lines 40-42. If the resend counter has exceed the counter limit value the receiving unit (i.e. receiving apparatus) is assumed to be operating in a poor area of reception and transmission of subsequent resent requests is disabled (col. 4 lines 49-53)

It would be obvious to one of ordinary skill in the art at the time of the invention to modify claim 25 by having by having a number of blocks of data that exceeds a predetermined value, as taught by Marturano et al. in order to detect excessive resend request eliminate the source of excessive resent requests by receiving units (col. 4 lines 50-54, col. 5 lines 40-56).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Zahorjan, John et al. (US 6859839) Bandwidth reduction of on-demand streaming data using flexible merger hierarchies. Provides a method of transmitting a streaming data file on-demand including the steps of scheduling a transmission of a program in response to a client request by a client; selecting a target transmission that is farther along in the program as a merge target for the transmission, so that the transmission could merge with the target transmission absent a change in the target transmission; receiving at the client a composite of the first transmission and data of the merge target, neither of which is time-distorted; and merging the transmission and the merge target and subsequent to the merger, merging the merge target with another transmission.

- Hoang, Khoi (US 6725267) Prefetched data in a digital broadcast system. A method for sending data to a client to provide data-on-demand services comprises the steps of: receiving a data file, specifying a time interval, parsing the data file into a plurality of data blocks based on the time interval such that each data block is displayable during the time interval, determining a required number of time slots to send the data file, allocating to each time slot at least a first of the plurality of data blocks and optionally one or more additional data blocks, such that the plurality of data blocks is available in sequential order to a client accessing the data file during any time slot, and sending the plurality of data blocks based on the allocating step. In one embodiment, the parsing step includes the steps of: determining an estimated data block size, determining a cluster size of a memory in a channel server, and parsing the data file based on the estimated data block size and the cluster size. In another embodiment, the determining step includes the step of assessing resource allocation and bandwidth availability.

- Okuyama, Tsuyoshi et al. (US 6543014) Data transmitting/receiving apparatus for executing data retransmission and parallel processor system. A parallel processor system provided with data transmitting/receiving apparatuses, a provided with a transfer data buffer for temporarily holding a plurality of data to be transmitted or received, a transmission/reception control means for controlling the transmission/reception of data and the reading of transmit data from and the

writing of receive data into the transfer data buffer, an error detecting means for detecting the presence or absence of any error in receive data, and a retransmission control means for issuing, when said error detecting means has detected any error, a retransmission request to the processing node or switching circuit on the transmitting side, and instructing, when it has received a retransmission request issued from the processing node or switching apparatus on the receiving side, said transmission/reception control means to retransmit the data. And the transmission/reception control means, in response to the instruction to retransmit, reads again retransmits the already transmitted data held by the transfer data buffer.

- Seaver, Terry R. et al. (US 6771642). Method and apparatus for scheduling packets in a packet switch. Reduction in the number of multicast synchronization delays in a packet switch by determining the mix of packets pending at the input ports. When a sufficient number of multicast packets are ready for transfer, the packet switch preferably transmits a programmed number of multicast packets (or as many multicast packets that exist up to that programmed number). After transmitting these multicast packets, the packet switch resumes preferably transmitting unicast packets. Thus, the number of multicast synchronization delays is reduced the bandwidth utilization of the packet switch is correspondingly increased and the load due to multicast packets and unicast packet is balanced.
- Yamato; Jun-ichi (US 6134585) Stream transfer control system for distributing streams of moving images and voice to clients and reproducing the same and data reading method thereof. A stream transfer control system including a server unit and a plurality of clients connected to each other through a network, the server unit including a plurality of transmission buffers provided corresponding to the respective clients, a read management unit for issuing a data reading request upon receiving a transfer request from a client, as well as issuing a data reading request every time a data block stored in the transmission buffer is read to empty the buffer, and a data transfer unit for reading a data block in the transmission buffer after a lapse of a fixed time since when a transfer request arrives at the read management unit and at every lapse of the fixed time from then on, thereby transferring streams to the plurality of clients over the network.
- Peters, Eric C. et al. (US 6415373) Computer system and process for transferring multiple high bandwidth streams of data between multiple storage units and multiple applications in a scalable and reliable manner. Multiple applications request data from multiple storage units over a computer network. The data is divided into segments and each

segment is distributed randomly on one of several storage units, independent of the storage units on which other segments of the media data are stored. At least one additional copy of each segment also is distributed randomly over the storage units, such that each segment is stored on at least two storage units. This random distribution of multiple copies of segments of data improves both scalability and reliability. When an application requests a selected segment of data, the storage unit with the shortest queue of requests processes the request. Random fluctuations in the load applied by multiple applications on multiple storage units are balanced nearly equally over all of the storage units. This combination of techniques results in a system which can transfer multiple, independent high-bandwidth streams of data in a scalable manner in both directions between multiple applications and multiple storage units.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carolyn F. Fleary whose telephone number is (571) 572-7218. The examiner can normally be reached on 8:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on (571)272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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